USPS-RM2015-7/5
Public Materials Supporting Analysis by Prof. Bradley
of the Supplemental Report by Dr. Kevin Neels

I. PREFACE

USPS-RM2015-7/5 contains the supporting materials for the analysis conducted by Professor Michael Bradley (on behalf of the Postal Service) regarding the Supplemental Report of Dr. Kevin Neels (submitted on behalf of United Parcel Service).

II. ORGANIZATION

In addition to this Word (pdf) Preface, USPS-RM2015-7/5 consists of a zip file containing four directories. The following pages provide the name and contents of the files in each directory.

1. Excel Workbooks

Filename	Tab	Contents
Confid.Bands.MC.Avg.Increm.Times.xlsx	Confidence_Bands	Calculates 95% confidence intervals for Dr. Neels' estimated marginal times shown in Table 12 (page 39) of his Supplemental Report.
Confid.Bands.MC.Avg.Increm.Times.xlsx	Avg_Increm_Times	Computes the average incremental times by bundle type using the method explained by Professor Bradley on page 17 of his report.

2. Directory – SAS_Logs

Filename - SAS Log (.log)	Contents
Correlations for parcels	SAS log file from corresponding program.
Estimate Form 3999 model with parcels	SAS log file from corresponding program.
Evaluating imputation models for deviation parcels	SAS log file from corresponding program.

3. Directory – SAS_Output

Filename - SAS Output (.lst)	Contents
Correlations for parcels	1. Display variables in merged Form 3999 and imputed parcel data. 2. Display summary statistics for several variables on merged dataset. 3. Display correlation coefficient matrix between In-Receptacle Parcels, Deviation Parcels, DPS Volume, and Delivery Points.
Estimate Form 3999 model with parcels	1. Display variables in Winsorized Form 3999 dataset. 2. Display summary statistics for several variables on merged dataset. 3. Display regression results that contain parameter estimates, collinearity and heteroscedasticity diagnostics, elasticities, and marginal times.
Evaluating imputation models for deviation parcels	1. Display variables in volume dataset. 2. Display summary statistics for several volume and scan variables from parcel study. 3. Display the replication of deviation parcel model. 4. Display the estimated model results on first week of parcel study data. 5. Display regression results for Mincer-Zarnowitz equation. 6. Display test bias results for deviation parcel variable. 7. Display test efficiency results for deviation parcel variable. 8. Display predicted values and calculate forecast errors.

4. Directory – SAS_Programs

SAS Program (.sas)	Inputs –SAS Data Sets (.sas7bdat)	Contents
Correlations for parcels	1. form3999_dataset_winsorized[1] 2. dev_imputations[1] 3. irp_imputations[1]	1. Merges Form 3999 data with the In-Receptacle Parcel and Deviation Parcel imputations. 2. Compute summary statistics on several variables in the merged dataset. 3. Calculate correlation coefficient matrix between In-Receptacle Parcels, Deviation Parcels, DPS volume, and Delivery Points.
Estimate form 3999 model with parcels	1. form3999_dataset_winsorized[1] 2. dev_imputations[1] 3. irp_imputations[1]	1. Merges Form 3999 data with the In-Receptacle Parcel and Deviation Parcel imputations. 2. Compute summary statistics that are used to calculate elasticities. 3. Estimate the full model including DOIS parcels. 4. Compute elasticities and marginal times.
Evaluating imputation models for deviation parcels	1. dois_package_study_masked_zips[2] 2. dois_package_study_volume_masked_zips[2]	1. Merge scan and volume data from package study. 2. Compute summary statistics on several variables in merged dataset. 3. Replicate deviation parcel imputation by Dr. Neels using PROC COUNTREG. 4. Estimate model on first week of study data. 5. Compute and evaluate predictions for second week of data, including statistical tests for bias and efficiency.

[1]SAS datasets were converted from STATA datasets which were filed as part of UPS-LR-RM2015-7/NP2.
[2]SAS datasets were filed with USPS-RM2015-7/1.